REMARKS

The Applicants request reconsideration of the rejection.

Claims 1-20 remain pending.

A certified copy of Japanese priority application No. 2004-26356 accompanies this Reply to complete the claim for foreign priority benefits under 35 U.S.C. §119.

A new title has been provided as required by the Examiner. Further, claims 6 and 7 have been amended to address the informalities noted on pages 2-3 of the Office Action. In view of these amendments, the Applicants submit that all requirements of 35 U.S.C. §35 U.S.C. §112, second paragraph have been addressed.

Claims 1-3 and 7-9 stand rejected under 35 U.S.C. §102(e) as being anticipated by Duprey et al., U.S. Patent No. 6,671,705 (Duprey). The Applicants traverse as follows.

As filed, claim 1 is directed to a data restoring method for restoring data stored in a second storage system in a storage subsystem including a first storage system and the second storage system. Each of the first and second storage systems is connected to a host.

The host transmits a command for settling a state of an application to the first storage system as data, the first storage system transmits the data to the second storage system, and the host and the second storage system both retain an identifier corresponding to the command and relate the identifier to the log data received by the second storage system from the first storage system. The host designates the identifier at any given time to thereby restore data at any given time by the second storage system.

In addition, the first storage system processes an I/O request from the host, and as a result of I/O processing of the second storage system, transmits updated data which is received by the second storage system as the log data.

Duprey, on the other hand, does not disclose a first storage system that processes an I/O request from a host and, as a result of I/O processing of a second storage system, transmits updated data which is received by the second storage system as update log data. Rather, Duprey describes a remote mirroring system including a master storage unit that stores information in a log and uses the information from the log to resynchronize slave images following a failure in the master storage unit. Specifically, upon receiving a write request from a host, the master storage unit stores a write entry in the log. The write entry identifies a portion of the slave images that may be unsynchronized from the master image due to the write request. In the event of a failure, the log is available to the master storage unit for recovery. However, "In the INACTIVE state (402), the host is not permitted to access the master image. Thus, the host cannot read from the master image or write to the master image. The mirror defaults to the INACTIVE state (402) when the . . . mirror is created, and the mirror must be in the INACTIVE state (402) before the mirror can be deleted."

The administrator can attempt to activate the mirror and transition it into the ACTIVE state (404). If there is a problem somewhere within the mirror that prevents the mirror from operating normally, however, the mirror transitions into the ATTENTION state (406), in which the host is also not permitted to access the master image. In other words, only during the ACTIVE state is the host permitted to read from or write to the master image. Thus, Duprey does not disclose a first storage

system that processes an I/O request from a host and, as a result of I/O processing at the second storage system, transmits updated data retained by the second storage system as update log data, as claimed in claim 1.

In addition, Duprey's master storage unit 130 and slave storage units 140 are included in a storage system 120 which is connected to host 110. The slave storage units 140 are connected to the master storage unit 130 within storage system 120 but the slave storage units 140 are not connected to a host via a communication channel as required by claim 1. For this reason as well, claim 1 is patentably distinguishable from Duprey.

Dependent claim 2 requires the host to issue an I/O instruction of an identifier to the second storage system at a remote site, but Duprey does not disclose that the host 110 communicates with the slave storage systems 140. The passage of col. 1, lines 44-49 describes a general practice of storing multiple copies of host data in physically separate storage units as "remote mirroring," but does not disclose that Duprey issues an I/O instruction of an identifier from a host to a slave storage system.

Dependent claim 3 requires the second storage system to receive the I/O instruction of an identifier of the host, and to relate the update log of data to the identifier to store it in a storage unit. However, the remote mirroring disclosed by Duprey in cols. 19-20 (cited in the Office Action) describes re-synchronizing between the master storage unit and the slave storage units, and does not describe that the slave storage systems receive an I/O instruction of an identifier of the host, or relate the update log of data to the identifier to store it in a storage unit.

Independent claim 7 is directed to a data processing method, including steps of requesting a storage system to create and save a copy of data which has been stored in a storage unit, requesting the storage system to record an update portion of data due to processing of a host, and transmitting the storage system identification information for identifying a state of the computer system at any given time, wherein the steps are performed by the host. Claim 7 further recites steps of creating and saving a copy of data of the storage unit in response to a request of the host, saving data prior to and subsequent to the update and information indicating a place of update as log data, retaining identification information to be transmitted from the host, and relating the log data to the identification information, where these steps are performed by the storage system. According to the Office Action, the storage system corresponds to the overall storage system 120 of Duprey, including master storage system 130 and slave storage systems 140. Again according to the Office Action, the claimed storage system corresponds to the master storage system 130. However, the master storage system 130 does not perform the creating, saving, retaining and relating steps required by claim 7. Rather, after storing a write entry in a write intent log, the remote mirroring logic updates the master image based upon the write request, and then proceeds to update the slave images in the slave storage systems based upon the write request. In particular, the master storage system 130 of Duprey does not save data prior to and subsequent to the update and information indicating the place of update as log data, but rather stores write entries only in the log disclosed in col. 16. The remote mirroring logic proceeds according to the write request, and not according to the creating, saving, retaining, and relating steps set forth in claim 7.

Similarly, dependent claim 8 is separately patentable as requiring the storage system to discriminate the identification information received and to restore the data to the use of the copy of the data and the log data. Claim 9 is also separately patentable as further requiring the identification information to be held in common by the host and the storage system, and to be managed by the storage system by relating the identification information to the update history, such that the data stored in the storage unit is restored in response to an instruction from the host. Col. 19-20 of Duprey describe re-synchronization according to updating logic performed in conjunction with the remote mirroring described by Duprey.

Accordingly, although the Applicants appreciate the indication of allowable subject matter in claims 4-6 and 10-20, the Applicants also request an indication of allowability of the subject matter of claims 1-3 and 7-9 for the reasons set forth above.

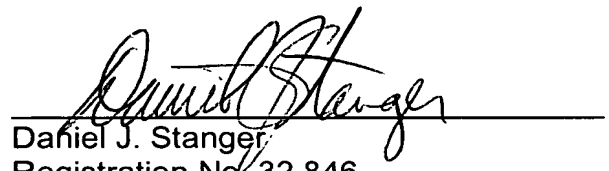
In view of the foregoing amendments and remarks, the Applicants request reconsideration of the rejection and allowance of the claims.

To the extent necessary, the Applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to

the deposit account of Mattingly, Stanger, Malur & Brundidge, P.C., Deposit Account No. 50-1417 (referencing attorney docket no. NIT-411).

Respectfully submitted,

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.



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